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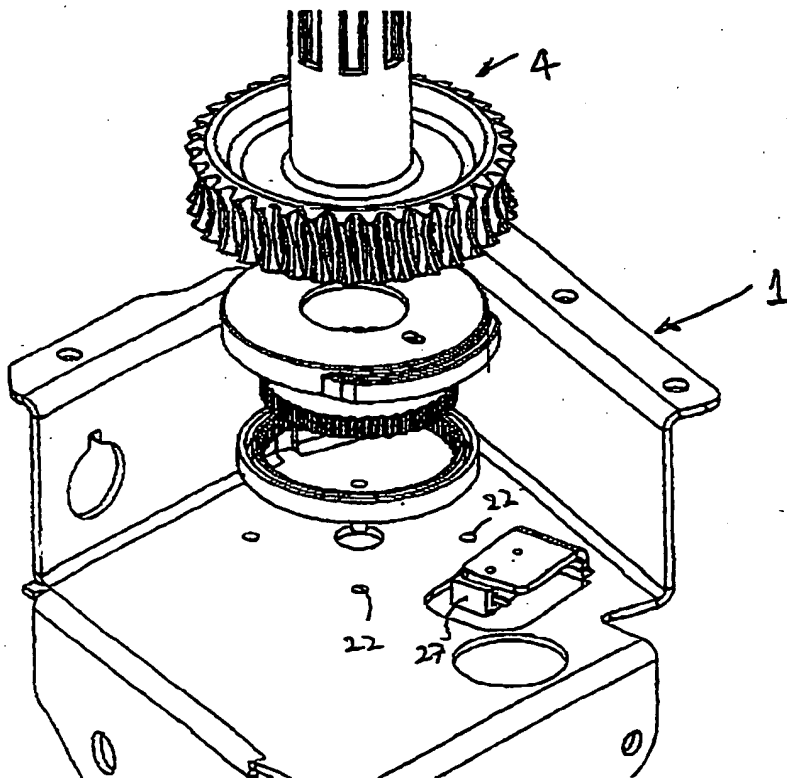
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[Continued on next page]

(54) Title: LIMIT CONTROL



(57) Abstract: Apparatus for referencing a rotary drive with limits of movement required for that drive to take account of a particular application, for example the movement limits of opening or closing a garage door, comprising referencing a cam actuable switch (27) to the disposition of a drive in a range, said apparatus having an eccentric member (16) dependent on the drive, a spur gear (17) carried by the eccentric member and free to rotate relative to the eccentric member, a ring gear (19) with its inwardly directed teeth in an epicyclic meshing relationship with the spur gear (17), and a cam (23) rotatable with the spur gear adapted to interact with a switch (27), wherein there is an adaption or a capability whereby the switch is in a substantially fixed relationship with said ring gear (19).

WO 2004/044362 A1

Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— with international search report

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2003/000212

A. CLASSIFICATION OF SUBJECT MATTERInt. Cl. ⁷: E05F 15/10, E06B 9/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI: E05F 15/ic and switch, control, safety, cam; E06B 9/68 and cam, gear

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 243 784 A (WHITAKER et al) 14 September 1993 Whole document	
A	US 5 181 891 (POHL et al) 26 January 1993 Whole document	
A	US 6 167 770 B (NASS) 2 January 2001 Whole document	
A	US 4 159 598 A (GATLAND et al) 3 July 1979 Whole document	



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
14 January 2004

Date of mailing of the international search report

19 JAN 2004

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos : 11, 21, 31, 33 - 41
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Claims 11, 21 and 31 are unsearchable as they refer to another patent specification in respect of essential features.
Claims 33 - 41 are so unclear that a search cannot be carried out.

3. ☐ Claims Nos :
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

Information on patent family members

PCT/NZ2003/000212

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Patent Document Cited in Search Report				Patent Family Member			
US	5243784	CA	2099088	EP	0585525		
US	5181891	EP	0469286	JP	4232122	DE	4021973
US	6167770	BR	9902542	ES	2177365	IT	MI991369
		DE	29812177				
US	4159598	CA	1042931	CA	1053272	US	4055023
END OF ANNEX							